Цепь Чуа

$t_{min} := 0$ $t_{max} := 200$ $steps := 2000$ $appVersion(4) = "1.2.9018.0"$

$\alpha := 9$ $\beta := \frac{100}{7}$ $C_1 := \frac{1}{9}$ $C_2 := 1$ $L := \frac{1}{7}$ $G_a := -0.8$ $G_b := -0.5$ $G := 0.7$

$\alpha := \frac{C_2}{C_1}$ $\beta := \frac{C_2}{L \cdot G^2}$ $m_0 := \frac{G_a}{G}$ $m_1 := \frac{G_b}{G}$

$$h(x) := m_1 \cdot x + \frac{1}{2} \cdot (m_0 - m_1) \cdot (|x+1| - |x-1|)$$

$$\begin{cases} \frac{d}{dt} x(t) = \alpha \cdot (y(t) - x(t) - h(x(t))) & x(0) = 0.5 \\ \frac{d}{dt} y(t) = x(t) - y(t) + z(t) & y(0) = 0 \\ \frac{d}{dt} z(t) = -\beta \cdot y(t) & z(0) = 0 \end{cases}$$

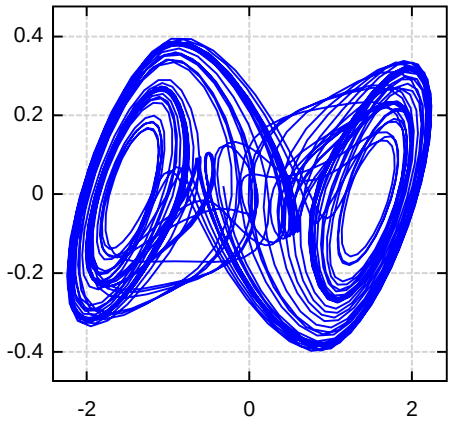
$$xyz := rkfixed\left(\begin{pmatrix} x(t) \\ y(t) \\ z(t) \end{pmatrix}, t_{max}, steps\right)$$

$$\Delta t := \frac{t_{max} - t_{min}}{steps} = 0.1$$

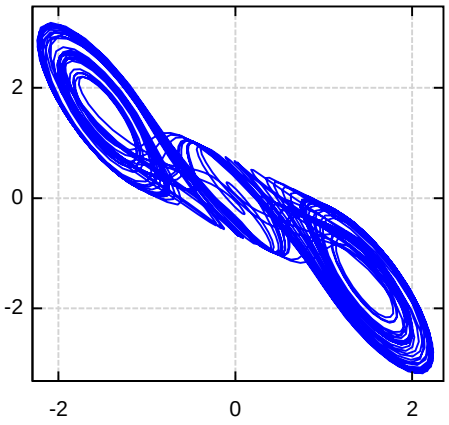
$N := rows(xyz) = 2001$

$T := col(xyz, 1)$ $X := col(xyz, 2)$ $Y := col(xyz, 3)$ $Z := col(xyz, 4)$

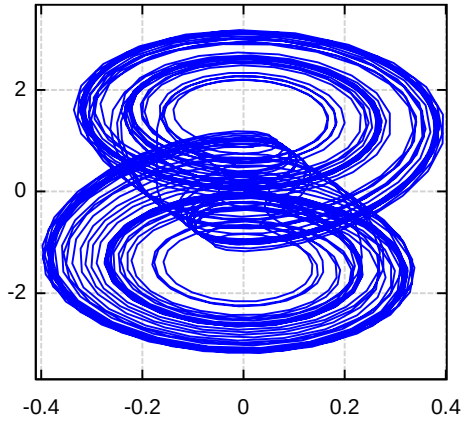
$XY := augment(X, Y)$ $XZ := augment(X, Z)$ $YZ := augment(Y, Z)$



XY



XZ



YZ